and all distillation gases practically obtained must lie between the values, which are bounded by the above two analyses.
Let us now determine some characteristic properties of both these gases.
The combustible value is seen to be an important property, and this is:—

C -poorest Gas.			C- rif	Lfs t (Ju	
Cubic metre.	Calories.	Cubic metre.			< '.a lories.
3-1 .	CWHB X 14, 185= 43,973	4-5 .	C,, ,H	w X 14	,lS/5 = (53,cS,'i2
23-7 .	CH4 X 8,600=203,820	34-0 .	O H,	X «	,(500- =292, 400
56-0 .	H X 2,620 = 146,720	47'<5 .	11	X 2	,<>20 = 124,7 12
8-8 .	CO X 3,063= 26,954	8-3 .	00	X 3	J0(>'J = 2fvl~3
o-o .	O	0-2 .	O		
3-0 .	00a	1*8 .	C O,		
o-o .	N	3*5 .	N		
94-6 421,4(57	gas.	99-9 gas			fl(MJ,:j«7

A further characteristic is the carbon content of the gas. In the ascertainment of this, one must bear in mind that from p. 68 16 kilogrammes CH4, which contains 12 kilogrammes C, occupies a volume of 22*3 cubic metres at 716 millimetres. 28 kilogrammes €2^, which contains 24 kilogrammes C, occupies a volume of 22*3 cubic metres at 716 millimetres.
Thus there is obtained from 1 kilogramme C
'=1*86 cubic metre CH*, as is the case with CO and CDs,
12
or
Thus
22*3
-— =z0'93 cubic metre
1 cubic metre CH4 contains 0*538 kilogramme C.
1 cubic metre C2H4 contains 1*176 kilogrammes C . . . (25).
By use of the formulae (17) and (25), one can easily estimate the carbon content of the gas in 94*6 and 99*9 cubic metres.